

Master's thesis

International Business Management

2018

Karoliina Mäkelä

KNOWLEDGE EXPLOITATION THROUGH KNOWLEDGE MANAGEMENT AND INTERNAL COMMUNICATION



MASTER'S THESIS | ABSTRACT

TURKU UNIVERSITY OF APPLIED SCIENCES

International Business Management

2018 | 47 pages

Karoliina Mäkelä

KNOWLEDGE EXPLOITATION THROUGH KNOWLEDGE MANAGEMENT AND INTERNAL COMMUNICATION

In modern business world knowledge is seen as important organizational asset and exploiting it to the best can be the key to create competitive advantage over rivals in the markets. Knowledge is multidimensional concept and hence knowledge exploitation is a complex process. Commonly used dichotomy of knowledge is between tacit knowledge and explicit knowledge, and the differences between these two types of knowledge areas are also used as an approach to knowledge in this thesis.

Knowledge management and internal communication are closely related to knowledge exploitation, and often these three create a loose symbiosis. This thesis examines this symbiosis and the relation of knowledge management and internal communication in the knowledge exploitation process. This thesis also examines different approaches to knowledge according to desired knowledge exploitation outcomes.

Findings of this thesis lie on those different approaches to knowledge, knowledge management and internal communication as the desired knowledge exploitation outcome changes. Knowledge exploitation can for example occur through effective operational knowledge sharing, when knowledge management and internal communication efforts should focus on organizational information storages and effective information sharing. On the other hand knowledge exploitation can occur as knowledge creation, when the focus of knowledge management and internal communication should focus towards knowledge sharing and knowledge refinement.

KEYWORDS:

Knowledge, information, knowledge sharing, knowledge management, internal communication, tacit knowledge, explicit knowledge

Karoliina Mäkelä

TIEDON HYÖDYNTÄMINEN TIETOJOHTAMISEN JA SISÄISEN KOMMUNIKAATION KEINAIN

Nykyaikaisessa liike-elämässä tiedosta on tullut organisaation tärkeä resurssi ja sen tehokas hyödyntäminen voi olla avain kilpailuetuun samoilla markkinoilla toimivien kilpailijoiden keskuudessa. Tieto on monitahoinen konsepti ja sen takia myös tiedon hyödyntäminen on kompleksi prosessi. Yleinen tiedosta käytetty kahtiajako on hiljaisen tiedon ja kirjoitetun tiedon välillä, ja erot näiden kahden tietolajin välillä ovat myös pohjana tämän tutkimuksen lähestymiskulmissa tietoon.

Tietojohdaminen ja sisäinen kommunikaatio ovat läheisessä suhteessa tiedon hyödyntämiseen, ja usein nämä kolme muodostavat löysän symbioosin. Tämä tutkimus tarkastelee tuota symbioosia sekä tietojohdamisen ja sisäisen kommunikaation suhdetta tiedon hyödyntämisprosessissa. Tutkimus tarkastelee myös eri lähestymiskulmia tietoon tiedon hyödyntämisestä haluttavan lopputuloksen perusteella.

Tutkimuksen havainnot liittyvät noihin tiedon, tietojohdamisen ja sisäisen kommunikaation eri lähestymistapoihin sen mukaan, mitä tiedon hyödyntämisellä halutaan saavuttaa. Tiedon hyödyntäminen saattaa esimerkiksi ilmentyä tehokkaana operatiivisen tiedon jakamisena, jolloin tietojohdamisen ja sisäisen kommunikaation pyrkimykset pitäisi suunnata organisaation sisäisiin tietovarastoihin ja informaation tehokkaaseen jakamiseen. Toisaalta tiedon hyödyntäminen voi ilmentyä uuden tiedon luomisena, jolloin tietojohdamisen ja sisäisen kommunikaation pyrkimykset pitäisi keskittää tiedon jakamiseen ja jalostamiseen.

ASIASANAT:

Tieto, informaation, tiedon jakaminen, tietojohdaminen, sisäinen kommunikaatio, hiljainen tieto, kirjoitettu tieto

CONTENTS

LIST OF ABBREVIATIONS	5
1 INTRODUCTION	6
2 OBJECTIVES AND METHODS	7
2.1 Research objective	7
2.2 Research methods	8
3 WHAT IS KNOWLEDGE AND HOW IT DIFFERS FROM INFORMATION	10
4 WHY ORGANIZATIONS NEED KNOWLEDGE AND INFORMATION?	12
5 WHAT IS KNOWLEDGE MANAGEMENT?	13
5.1 Knowledge management on operational level	15
5.2 Knowledge management systems	16
5.3 Soft track of knowledge management	18
6 IMPORTANCE OF KNOWLEDGE DISTRIBUTION AND SHARING	19
6.1 Sharing document-based knowledge	20
6.2 Human-related knowledge sharing	21
6.3 Creating organizational knowledge through organizational learning	22
7 THE ROLE OF INTERNAL COMMUNICATION IN KNOWLEDGE SHARING	26
7.1 Individual as knowledge sharer and communicator	27
7.2 Organization as knowledge sharer and communicator	27
8 THE RELATION OF KNOWLEDGE SHARING, COMMUNICATION AND KNOWLEDGE MANAGEMENT	30
8.1 Role of knowledge management and internal communication in adding operational availability of knowledge	31
8.2 Role of knowledge management and internal communication in creating new knowledge	33
8.3 Knowledge capabilities and knowledge sharing	34
9 ANALYSIS AND FINDINGS	36

9.1 Hypothesis 1; Without knowledge management, effective knowledge exploitation is impossible	36
9.2 Hypothesis 2; Effective knowledge sharing enhances knowledge exploitation and knowledge creation	38
9.3 Hypothesis 3; Knowledge creation is dependent on knowledge management and internal communication	40
10 CONCLUSIONS	43
11 FUTURE STUDY	45
REFERENCES	46

FIGURES

Figure 1. Tacit and explicit knowledge (Mäkelä 2016)	11
Figure 2. SECI model. (Modified from Nonaka & Takeuchi 2005, en.wikipedia.org)	24
Figure 3. Process of knowledge distribution within organization (Mäkelä 2016)	31

TABLES

Table 1. Knowledge perspectives and their implications (Alavi & Leidner 2001, www.semanticscholar.org)	14
Table 2. Internal communication matrix (Welsh and Jackson 2007, 185)	28

LIST OF ABBREVIATIONS

ERP	Enterprise Resource Planning
KM	Knowledge Management
KMS	Knowledge Management System

1 INTRODUCTION

In today's business world knowledge has become a one of the most valued organizational resource. As technological innovations shape the traditional ways of working and intense competition forces companies to develop their operations, the importance of knowledge has been emphasized. One of the major reasons why knowledge is so valued, is because it is hard to imitate and thus a key to achieve competitive advantage. Along with this new era of knowledge, a term knowledge worker has been introduced. This term refers to a person who instead of taking part on traditional production of goods or services, offers value over the knowledge one possesses. As the current trend is going towards even more knowledge intense business world, knowledge will eventually have even bigger part in every-day working lives. Eventually this could lead to a business environment where everyone is a knowledge worker at some level, and thus knowledge sharing will become an important part of everyone's working lives and effective knowledge management will become even more valuable for companies.

The ability to create new knowledge from existing knowledge enables organizations to respond quickly and effectively to the changes happening in the surrounding business environment. As new knowledge is being created, its first instance normally is very limited and related to individuals included in the knowledge creation process. Transferring this tacit knowledge into organizational knowledge is the key to add operational availability of knowledge. Creating new knowledge from existing knowledge and transferring that new knowledge into organizational knowledge, are the key mechanisms for adding value to knowledge and achieving that competitive advantage against rivals in the markets. The key trigger for both mechanisms is knowledge sharing, and recognizing the most suitable and efficient ways to do this is one of the biggest organizational challenges during this knowledge intense era.

2 OBJECTIVES AND METHODS

Knowledge sharing, internal communication and knowledge management have all been topics of several researches during past decade, but not many of those researches have been done about the relation of these three topics. However, the interrelation between the topics is undeniable and in modern, knowledge intense business environment these cannot be totally separated from each other. In other words, one cannot function effectively without the others.

Knowledge sharing is the key tool for organizations to effectively utilize the knowledge possessed and also to add value for that knowledge. Internal communication again is a crucial enabler for knowledge sharing, and knowledge management is the strategic tool on how to combine knowledge sharing and internal communication effectively to meet the desired goals. Knowledge management itself is a complex process since the nature of knowledge is not unambiguous. Organizations use knowledge in diverse ways and places, and within a one organization there are multiple ways of exploiting knowledge. The focus of this research will be in the relation of knowledge management, internal communication and knowledge sharing, so knowledge management and internal communication are approached as tools and enablers for effective knowledge sharing. Also, the differences between sharing tacit and explicit knowledge are compared.

2.1 Research objective

The purpose of this thesis is to combine earlier researches made about knowledge sharing, internal communication and knowledge management to demonstrate how relevant internal communication and knowledge management are for exploiting knowledge effectively. The aim of this thesis is to map those key elements of knowledge sharing and knowledge management, needed for effective knowledge creation and exploitation. The aim is also to map the key differences on managing tacit versus explicit knowledge and what are those key elements to be noted when managing these two, different kind of knowledge areas.

First this paper defines the key elements discussed on, and after that examines the relations between these key concepts. The purpose is to find the links between these concepts and recognize some of the main elements how all concepts are linked together.

2.2 Research methods

The used research method is concept analysis which is theoritical research without empirical part. The essence of concept analysis builds on examining concepts and concept systems. Concept analysis has a need to explain different concepts and the relation between those concepts. (Nuopponen 2009, 312-313). By nature concept analysis can be for example terminological concept analysis when the desired research finding commonly is a concept system or a group of new definitions. (Nuopponen 2009, 314). Other type of concept analysis is interpreting concept research, which is also the type used in this reseach. Interpreting concept research aims to link and combine different concepts and through those relations between different concept even create new concepts (Nuopponen 2009, 314). This thesis will follow a basic structure used in previous concept analysis. This structure builds on four stages, from which the first one is building a information base based on previous researched made from the topic. Second stage is external analysis where related concepts are examined and mapped. Third stage is internal analysis where examined concept is decomposed and different point of views are examined. The final stage is drawing conclusions where existing concepts are approved or challenged, or even refined into new concepts. (Nuopponen 2009, 316-317).

This thesis builds a theoretical model on how internal communication and effective knowledge management can affect and possibly enhance knowledge exploitation by knowledge creation and adding operational availability of knowledge. Previous researches and literature are used to draw theoretical model combining the perspectives of internal communication, knowledge sharing and knowledge management. First this research defines those three key concepts based on previous literature and examine those singularly. When the nature of those concepts is defined, paper continues to examine the interaction of the key concepts and how those can effect on each other.

This paper is based on three different hypotheses made about knowledge, its different states and how to manage and share that knowledge. Knowledge is very broad concept and for companies to utilize this intangible resource can be difficult. Knowledge appears everywhere and is applied numerous different ways, so to keep track on this ongoing flow of data and information, requires lot of attention and managing. Exploiting knowledge effectively requires effort on understanding that knowledge and the needs for it. Therefore, the first hypotheses made for this paper is:

1. Without knowledge management, effective knowledge exploitation is impossible.

As knowledge appears everywhere and all the time, it does not have a permanent state, instead it is a variable concept and the needs for it varies also. Therefore, new knowledge is needed and organizations should be able to constantly create it. Knowledge creation is closely linked to organizational learning and learning is based on sharing existing knowledge as well as documenting new knowledge. Therefore, the first hypotheses made for this paper is:

2. Effective knowledge sharing enhances knowledge exploitation and knowledge creation.

Creating new knowledge is pointless unless it can be utilized in the organizational operations and in competition against rivals on the market. If organizations cannot effectively utilize all the knowledge it possesses, a lot of that valuable asset is wasted. Effective exploitation of knowledge requires knowledge to be available and hence, the third hypotheses made for this paper is:

3. Effective knowledge sharing can enhance the operational availability of knowledge

3 WHAT IS KNOWLEDGE AND HOW IT DIFFERS FROM INFORMATION

Knowledge is a broad concept and there is no one accurate definition for it. Roots of knowledge as a concept go all the way to Ancient Greece where philosopher Platon defined knowledge as “well justified true believing”. In modern time Nonaka and Takeuchi (1995; look Gao et al. 2008, 4) have described knowledge as conscious act of creating meaning. According to them knowledge is created when a person encounters a new situation and based on his/hers justified beliefs makes sense out of that new situation. Later on Davenport and Prusak (1998; look Gao et al. 2008, 4) have defined knowledge as “a fluid mix of framed experiences, values, contextual information and expert insight”.

Some previous researches argue that knowledge can be seen to be dependent and related to the situation where it is needed. This means that knowledge is not ready-made information and behavior patterns residing in heads of persons encountering to the situation, but rather it is being composed by the interaction of people, resources and routines present on the specific situation. (Lahtinen 2013, 663). From this point of view knowledge can be seen as competencies emerging from the knowledge of employees, combined with organizational policies and values. Taking this idea to further, Sveiby (2001, 345) defines knowledge as capacity-to-act. This capacity may or may not be conscious and this definition emphasizes the meaning of action; capacity-to-act requires action. Information is transferred into knowledge when an individual can exploit it to act correctly and efficiently in given situation. By time this gained experience together with organization’s vision and mission can be converted into core competencies.

As we notice, knowledge can be defined in quite various ways, but a traditional and more simple approach to knowledge is the division between explicit and tacit knowledge. Explicit knowledge is formalized and written knowledge which can be easily transferred. This means explicit knowledge can be for example specifications, manuals or formulas. Tacit knowledge is action-based, silent knowledge and skills someone has gained through experience. These are the competencies and knowledge gained through all previous experiences. Tacit knowledge is highly personal and one may not even be aware of having this knowledge, thus it is hard to transfer. Tacit knowledge is the base of organization’s intellectual capital. (Gao et al. 2008, 5, Xu 2007, 2.) To use this approach to differentiate the concepts of knowledge and information, it could be said that

information quite often is explicit or codified knowledge. In other words, information is more structural data than knowledge, and it is turned into knowledge when it is interpreted through personal or organizational experiences. When this information is understood and applied to a specific work function, and thus transferred into knowledge, it becomes tacit knowledge shaped by someone's personal background and experiences (Laihonen et al. 2013, 18-19, Lee & Yang 2000, 783-784).

In this paper knowledge is understood as information with meaning. In other words, information becomes knowledge when a person internalizes the information and is able to apply it in real-life situation. When this individual knowledge is codified, it becomes organizational knowledge. Thus, knowledge can emerge in different levels, as it can be codified instructions as well as personal know-how gained through personal experiences. Figure 1. illustrates the transformation of knowledge types when tacit knowledge is transferred into explicit knowledge.

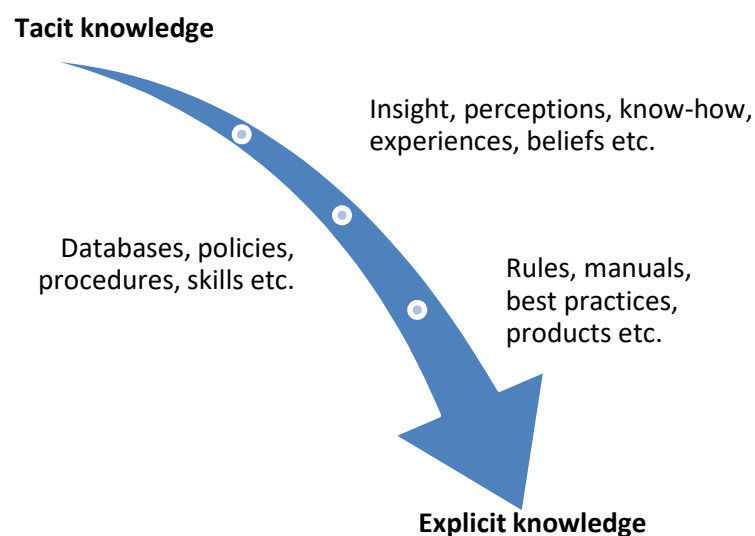


Figure 1. Tacit and explicit knowledge (Mäkelä 2016)

4 WHY ORGANIZATIONS NEED KNOWLEDGE AND INFORMATION?

According to the resource-based view organization's competitiveness is determined by its resources, and in modern knowledge based society, knowledge can be seen as a resource for value creation. However, this resource is very abstract and without effective knowledge management its potential is often not utilized effectively. With effective knowledge management, knowledge and information help the organization to adapt and affect to the environment and markets where it operates, and also to the changes happening within the organization. Knowledge can also guide the whole organization towards the most efficient ways of interpreting and execute its business functions. (Lintilä 2002, 20).

Knowledge can also be convert to core competencies as mentioned earlier. Organizational competencies are the refined set of organizational knowledge resources that separates the organization from its competitors. Competencies are not just a set of skills, they are a mixture of knowledge and capabilities. Organizational competencies are consisted from combining multiple organizational knowledge bases so it can be said that organizational knowledge is the foundation for organizational competences. (Hong et al., 2-7).

On more practical level knowledge is needed to perform everyday tasks and processes correctly and efficiently. This practical knowledge is used to guide employees towards those correct and efficient ways of performing those tasks they face on operational level. This might be very ad hoc knowledge and commonly needed at the correct time to perform a certain task. There might not be time or possibility to search the needed information, so organizations have to make sure that the everyday communication and knowledge sharing is sufficient enough to guarantee the needed level of operational knowledge. Successful implementation of operational knowledge also requires understanding the organizational processes and the crucial elements on those processes. Generating this comprehensive picture of internal processes requires gathering information from those processes and analyzing where more information is needed. Operational information can only be beneficial if it can be accessed at the right time and place, and transformed into knowledge. For this to be possible, knowledge management is needed.

5 WHAT IS KNOWLEDGE MANAGEMENT?

Term management is normally used to express the act of organizing and controlling a business or a similar organization. From the previous researches about management there can be separated two trends. According to the first trend management can be seen as more scientific method which emphasizes organizational order, rationality and consistency. In other words, it is about finding that best way to work. The later on evolved trend sees management as guiding organization as social system. Researches from this perspective focus on how to make human labor more effective and from this trend has evolved also the concept of knowledge management (KM). (Gao et al. 2008, 7-8).

Knowledge management is relatively new field in business research and yet there is no unambiguous definition for it. According to Ståhle (2003; look Hong et al., 2) knowledge management researches have approached the topic from four different perspectives: philosophic (what is knowledge?), organizational development (how to create and master knowledge together?), business perspective (how to create value from knowledge?) and technological perspective (the most effective tools for storing, delivering and mining knowledge).

Quite often knowledge management is referred to be managing knowledge processes and resources, but depending on the perspective from which knowledge is being observed, those processes of KM can vary. In table 1. different implications of KM and knowledge management systems (KMS) are presented to give a picture of the variety of KM depending on the perspective of knowledge.

Table 1. Knowledge perspectives and their implications (Alavi & Leidner 2001, www.semanticscholar.org)

Perspectives		Implications for Knowledge Management (KM)	Implications for Knowledge Management Systems (KMS)
Knowledge vis-à-vis data and information	Data is facts, raw numbers. Information is processed/interpreted data. Knowledge is personalized information.	KM focuses on exposing individuals to potentially useful information and facilitating assimilation of information	KMS will not appear radically different from existing IS, but will be extended toward helping in user assimilation of information
State of mind	Knowledge is the state of knowing and understanding.	KM involves enhancing individual's learning and understanding through provision of information	Role of IT is to provide access to sources of knowledge rather than knowledge itself
Object	Knowledge is an object to be stored and manipulated.	Key KM issue is building and managing knowledge stocks	Role of IT involves gathering, storing, and transferring knowledge
Process	Knowledge is a process of applying expertise.	KM focus is on knowledge flows and the process of creation, sharing, and distributing knowledge	Role of IT is to provide link among sources of knowledge to create wider breadth and depth of knowledge flows
Access to information	Knowledge is a condition of access to information.	KM focus is organized access to and retrieval of content	Role of IT is to provide effective search and retrieval mechanisms for locating relevant information
Capability	Knowledge is the potential to influence action.	KM is about building core competencies and understanding strategic know-how	Role of IT is to enhance intellectual capital by supporting development of individual and organizational competencies

A general definition of knowledge management is that it is used to form a general view of all the knowledge organization is possessing and to transform that knowledge into business value (Laihonen et al. 2013, 14). However, this is a very generic definition and does not explain how knowledge management appears within organizations. When knowledge management is effectively implemented, it is a set of organizational design and processes, operational principles and structures as well as technologies that enable knowledge workers to leverage their creativity and ability to deliver business value (Lee

and Yang 2000, 784). In practice, the author sees this as a mixture of technology, practices, processes and strategy. It combines the technological side of knowledge storing and sharing with the practices and processes that organization is using to gather new knowledge and exploit and refine existing knowledge. These practices and processes are closely connected to the strategy since organization's strategy is the key idea how to create value for customers, and the foundation of this value lies in the organizational knowledge and competencies. Although the definition by Lee and Yang (2000) identifies knowledge management as a mean to assist knowledge workers, it is not just purely knowledge organizations benefiting from knowledge management. As today's globalized business world is highly competitive, every organization can profit from well-functioning knowledge processes, for example information sharing, which ensures organization is fully utilizing its knowledge capacity to find the best practices and sufficient efficiency for day-to-day operations.

5.1 Knowledge management on operational level

Operational knowledge is crucial for a company if it wishes to achieve and maintain high level of operational coordination. Effective operational coordination ensures the ability to find the most effective ways to operate internal processes and quickly refine those processes according possible needs coming from within the organization as well as from the surrounding markets. Operational coordination starts from understanding the process flows and recognizing the key stakeholders involved. Only after the internal processes are well coordinated, can operational knowledge be utilized effectively, hence documenting operational knowledge is useless if there is no clear picture where and why that knowledge is needed. (Pankaj and Pankaj 2013, 422).

From the perspective of knowledge management implications presented in table 1., operational KM sees knowledge as an object that can be stored and transferred. The role of KM is to expose individuals to that stored data and information and enhance access to data sources. Focus is on developing functional data warehouses and ensuring those are effectively exploited.

In practice KM on operational level could involve for example strategies how to build an integrated information system where everyone is involved in gathering and distributing that operational knowledge. Knowledge management should not be merely top management's visions on how to utilize knowledge, it should be concrete actions to

involve lower level employees to search and distribute information and also explanations how that information can be utilized to ease their tasks. Creating this organizational culture, where information sharing and storing is part of every-day work, is just a first step in knowledge management. The real value of the gathered operational information lies in the ability to transfer that information into knowledge. Information is transferred into knowledge when it can be used to shape the existing processes and thus make them more effective.

For improving the operational processes there should be data collected continuously for follow up. If there is no starting point where to compare, improvements cannot be done. The strategy how to collect this operational data is also part of organization's knowledge management strategy. Everything cannot be measured simultaneously, so organizations has to recognize the key processes where to focus. Only by gathering operational knowledge, the weaknesses can be revealed and fixed. This process of information collection needs to be well managed and cannot be done without help of IT tools. (Pankaj and Pankaj 2013, 414-415).

5.2 Knowledge management systems

For effective knowledge sharing, and transferring individual knowledge into organizational knowledge, knowledge management systems (KMS) are needed. KMS is the collection of IT tools organization is using to collect, organize, transfer and distribute knowledge among employees (Offsey 1997, 115). A common example of KMSs are the ERP systems organizations are using or document management systems like electronic archives. However, KMSs alone will not ensure knowledge is effectively shared and documented. Choi, Kang and Lee (2008) found out in their research that KMS is a necessity for effective knowledge sharing, but even excellent KMS will not increase people's willingness to share information, whereas poor KMS on the other hand might decrease it. This can be compared to Herzberg's theory on motivation where some factors are related to job satisfaction, called motivators, and other factors are associated with dissatisfaction, called hygiene factors. According to this theory KMSs can be seen as hygiene factor which is necessary requirement before motivators can be used to increase people's motivation. (Choi et al. 2008, 749-750). Thus, it could be said that knowledge management systems are the necessary base for knowledge sharing and

without effective KM systems, knowledge management strategies cannot be properly implemented.

To benefit from the KMS, organization has to be able to create a fit between the KMS and its business processes. This fit means KMS is suitable for the organization's business operations and employees know, how to exploit it for their purposes. KM systems success depends on how willing employees are to use it and hence, it is crucial to notice the user perspective when creating and maintaining KMS. The fit can be created by focusing on some key factors and ensuring those are on sufficient level. Modified from Cao, Thompson and Triche (Cao et al. 2013, 5568-5569), these factors are:

1. Information quality: Stored data needs to be current and up to date. It also should be detailed enough, but not over complicated and not focusing on too minor issues to avoid data overflow.
2. Information location and content: Needed information has to be easily located and the content has to be easily defined whether it is relevant for the purpose.
3. Authorization: Level of access. Not everyone needs to have access to all information because it can just create unnecessary information chaos, but information needed to perform one's tasks has to be available. This requires recognizing stakeholders involved in business processes, so that information access can be guaranteed for correct persons.
4. Compatibility: Data has to be in coherent shape. Data collected from different internal sources has to be comparable and it should be able to be consolidated.
5. Ease of access and proper training.

Most of the above-mentioned factors are related to the usage of data content within the KM system but equally important is the relationship with users. KMS is not effectively utilized if employees do not know all the possibilities IT tools offer and also if the chosen tools are not suitable for day-to-day activities. Finding out the correct tools and communicating those to all employees requires close co-operation between operational units and IT department. As today's business world is increasingly technology oriented, IT departments should be brought closer to organization's everyday business processes instead of being separated unit.

5.3 Soft track of knowledge management

So called soft track of KM concentrates on the people side of knowledge. It is about creating that knowledge sharing organizational culture, where the value of tacit knowledge is emphasized. This soft track also emphasizes the difference between information and knowledge. Whereas operational KM might concentrate on documenting information gained from following operational processes and exposing employees to that information, soft track of knowledge management concentrates on the flow of tacit knowledge, in other words managing the people who have the knowledge. (Gao et al. 2008, 10-12). Although focusing on managing people, soft track of KM also searches mechanisms to create value for organization by operational effectiveness. However here the approach is concentrating on the people who have the knowledge to build the better machinery or create more effective processes etc. (Sveiby 2001, 346). Referring to table 2., soft track of KM sees knowledge as state of mind and the role of KM is to enhance learning and building core competencies. KM focuses on knowledge flows and how to create links between knowledge sources to make those knowledge flows even wider and deeper.

6 IMPORTANCE OF KNOWLEDGE DISTRIBUTION AND SHARING

Earlier in this paper was mentioned that according to the resource-based view, knowledge could be seen as a resource for value creation. From this approach has evolved a knowledge-based view which has taken the idea of knowledge as a resource one step further. According to this approach information itself is not so valuable, but the value is generated when information can be refined into knowledge, and instead of gathering and storing information, organization can utilize this information as organizational learning and advance their core competences. (Lahtinen 2013, 662). The key for refining knowledge is in effective knowledge sharing, since combining existing knowledge bases can lead to creating new knowledge. Knowledge sharing can be divided into two forms of sharing; document-based sharing and human-related sharing (Lahtinen 2013, 668). In some researches knowledge sharing and transfer have been differentiated as knowledge sharing would also require internalizing the knowledge shared, whereas knowledge transfer would only require distribution of knowledge (Hudcová 2014, 51). Incorporating this thought, document-based knowledge sharing could be said to be knowledge transfer and human-related knowledge sharing is actual knowledge sharing.

For creating new knowledge, the human-related sharing could be said to be more effective, because in the social interaction the exchange of ideas and information is a two-way knowledge combination process. In other words, human related knowledge sharing combines multiple perspectives and knowledge sources and might create new points of view. However, for the operational every-day work, document-based sharing is a necessary because of the amount of shared information and knowledge is so massive that it cannot rely only on human-related sharing, and also because human-related sharing is not always possible in every situation, for example in multinational organizations.

The trajectory between data, information and knowledge is the base for creating new knowledge and hence sharing information and knowledge is a crucial foundation for knowledge creation. Data itself is turned into information when it gains meaning and purpose. The next step in this trajectory is when knowledge is derived from information and this process can be roughly divided into four ways; comparison, consequences,

connections and conversation. All these require information sharing but the type of sharing changes between document-based, human-related and the combination of these two. In comparison information can be compared to other information gained from similar situations and by this comparison of two or more information bases are used to create combined knowledge. In consequences knowledge has been derived from the implications of action and related information. In connections, the similarities or differences are actively searched from different information bases and when connections are found, it has been used to create knowledge. The last way, conversation, is social interaction where information is refined by different opinions and perspectives. (Xu 2007, 2). Without effective knowledge sharing, both human-related and document-based, these four processes of knowledge refining would not be possible.

From a more practical approach knowledge sharing is needed for completing certain tasks, maintaining organizational, as well as individual expertise and developing competencies (Lahtinen 2013, 671). Knowledge sharing is also required for creating motivational organizational culture where employees feel belongingness towards the organization. When employees feel organization wants to include them in the organizational knowledge network, they are more likely to put effort themselves into knowledge sharing.

6.1 Sharing document-based knowledge

For the document-based knowledge sharing, the technological side of knowledge management is essential. Instead of direct communication, the knowledge producers and users use organizational knowledge repositories as a primary medium for knowledge exchange (Wang and Ahmed 2005, 324). Traditionally IT tools have been mainly used for storing and mining information but for effective knowledge utilization, the stored information has to be delivered to the right place at right time. As organizations gather more and more information it has become even more crucial to be able to filter the needed information but at the same time break the boundaries of knowledge silos and ensure the whole organization have equal access to needed information. (Offsey 1997, 115-120). Maintaining the organizational information and knowledge repositories and sharing the information to whole organization requires effective knowledge management systems.

Organizations have to offer the proper infrastructure for knowledge sharing but even the most effective IT tools are not valuable if employees don't know how to effectively use them. In today's knowledge intensive business environment to be truly able to effectively utilize information within the company, organizations could include development of knowledge skills to basic internal training, especially in organizations where knowledge management systems are yet not an integrated part of organization.

To make the information searching and sharing as easy as possible purely from technological perspective, information searcher should be able to find the needed information with reasonable effort. This requires organizations to have clear processes also for maintaining the level of documented knowledge. In addition to offering the needed infrastructure for knowledge sharing, organizations also have to maintain the level on information stored. For example, when anyone can add new information to the information storages, how to make sure information stays in cohesive format and up to date? One answer for this problem could be for example offering ready layouts for adding new information. (Offsey 1997, 115-120). As today's organizations commonly have flowcharts how to perform every-day tasks and processes, information management should not be exception. Only way to ensure cohesive behavior is to offer ready patterns and instructions for that wanted behavior.

6.2 Human-related knowledge sharing

Human-related knowledge sharing is about social interactions and normally considers tacit knowledge whereas document-based knowledge sharing considers only explicit knowledge. In various different researches, the atmosphere of trust has been highlighted as the most important requirement for effective human-related knowledge sharing. When people are able trust to their colleagues and feel their colleagues have the needed expertise and skills to perform required tasks, the willingness to share their knowledge increases. When there is two-way information exchange, it builds up the atmosphere of trust and this again supports more knowledge sharing in future. (Choi et al. 2008, 749, Hudcovà 2014, 55, Barachini 2009, 108).

The ability to add value to knowledge lies in human-related knowledge sharing. Document-based sharing relies to effective IT tools, but as these tools are readily available to everyone and IT solutions are easy to copy by competitors, the true value lies in human-related knowledge sharing (Xu 2007, 3). Also, a considerable part of

knowledge within an organization resides in semi-structured or unstructured form which means that the documentation of this knowledge is impossible and the sharing of it relies on social relations.

Human-related knowledge sharing depends greatly on the willingness of employees to share their tacit knowledge. As mentioned before, incorporating Herzberg's motivational theory, there are some basic hygiene factors to fulfill before motivational actions can be taken. This is why organization has to offer a good infrastructure for knowledge sharing and after that focus on motivating people to share their knowledge. The biggest challenge for knowledge sharing is not to offer sufficient IT systems, but rather it is to motivate people to exploit offered IT and participate in knowledge sharing. People tend to see their personal knowledge as an advantage over an organization, so they are not always willing to share that knowledge, because they do not want to lose their dominance. However, when people feel they are rewarded over sharing knowledge and they feel valued over the knowledge they offer, the willingness towards knowledge sharing grows. Some key basic elements on creating organizational culture that supports individual knowledge sharing are building trust, group support and respected leadership. (Choi et al. 2008, 749, Barachini 2009, 108). To create this kind of organizational culture, lower level managers have a significant role. Knowledge management strategies should not be top management's responsibility, rather it should be a perspective of every level of management. This meaning that the lower level managers have more detailed knowledge of operational processes and where are the areas which need improving. They are the ones who can include the employees into discussion of best practices and most efficient ways of working and communicate this information to upper levels, where the strategic decisions are made to improve also the operational level of organization. (Bailey and Clarke 2001, 61, 67). Also avoiding too competitive organizational culture improves the level of knowledge sharing. If organizational reward systems encourage individual competition, it will at the same time weaken the level of knowledge sharing. (Sveiby 2001, 348).

6.3 Creating organizational knowledge through organizational learning

Organizational knowledge is knowledge that exists on an organizational level. It is not individual dependent knowledge and it is more durable than personal knowledge because to become organizational it has to be more structured and documented. When

individual knowledge can be transferred into organizational knowledge it becomes more valuable because then it is not loosed so easily and hence more applicable also in the future. Organizational knowledge can also be used more widely within the whole organization, not just by people involved with the creation of this knowledge. (Xu 2007, 4-5). Organizational learning refers to the process where organization is able to absorb new knowledge and this knowledge is stored into organizational knowledge repositories and hence not dependent on individuals (Laihonen et al. 2013, 59). From ontological viewpoint, organizational knowledge creation or organizational learning happens as organization amplifies knowledge created by individuals and is able to include that knowledge into organizational knowledge network (Nonaka 1994, 17).

Nonaka has defined learning process as interaction modes between tacit and explicit knowledge. This process of creating new knowledge, called SECI model (figure 2), consists of four phases which are socialization, externalization, combination and internalization. These four phases create an ongoing spiral of knowledge creation where all phases are related to each other and together create a continuum towards organizational learning. (Nonaka 1994, 19, Wijnhoven 2003, 199).

Nonaka described the socialization as creating new tacit knowledge from existing tacit knowledge. This happens by interpersonal relations, and from knowledge sharing perspective, this is purely human-related knowledge sharing which occurs through communication or shared experience (Nonaka 1994, 19). Externalization is the transformation of tacit knowledge into explicit knowledge. This means documentation of individual and group skills and experiences as well as norms and values. This requires good communication skills and is the key for increasing operational availability of knowledge. (Wijnhoven 2003, 199-200). As socialization was purely human-related knowledge sharing, externalization is to the same extent document-based sharing, hence IT has a meaningful role in it.

Combination is gathering together the separate pieces of existing explicit knowledge through social processes. The reconfiguring of existing information through sorting, adding, recategorizing and recontextualizing happening in these social processes, like meetings, can lead to new knowledge. (Nonaka 1994, 19). For combination process organization should be able to define its knowledge domains and exploit IT to create communication infrastructure which supports people to contact each other from a distance. Combining internal knowledge also increases organizational integration. (Wijnhoven 2003, 200).

Internalization is the last of four ways of transforming information between tacit and explicit and it is the process where externalized knowledge is again internalized by people with their personal background and experiences. (Wijnhoven 2003, 200).

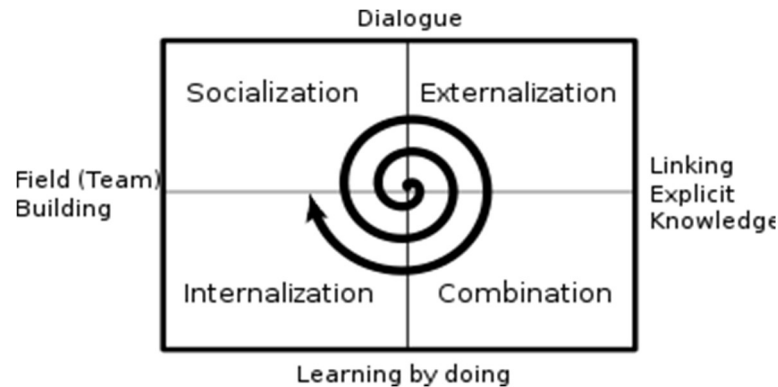


Figure 2. SECI model. (Modified from Nonaka & Takeuchi 2005, en.wikipedia.org)

The four stages of this learning model are a continuous process within an organization and as this process keeps repeating, these interactions between tacit and explicit knowledge are the base for creating organizational knowledge. Communication is corner stone for this process to keep continuing and without effective communication, the interactions of these stages is not possible.

These phases are dependent on each other and the spiral of organizational learning can be said to start from socialization where teams or fields of interaction are being created. In these groups hidden tacit knowledge is being exposed through dialogue supported by individual experiences and this triggers the phase of knowledge externalization. (Nonaka 1994, 20). Sharing operational experiences and know-how is crucial part of socialization and thus socialization is needed to support externalization of knowledge. When new knowledge and ideas are being shaped, it will be combined with existing data and external knowledge. This combination phase is an iterative process of trial and error and during it new concepts are shaped. By time these concepts start to get concrete shape and new knowledge can be applied, which means there has been internalization of knowledge. (Nonaka 1994, 20).

Organizational learning and knowledge creation is an ongoing process of knowledge distribution fueled with organizational communication and KM systems. To make this spiral of learning successful, organization needs to focus on how to make communication effective, e.g. how to ensure communication leads to sharing knowledge.

Nonaka defined three main factors for enabling organizational knowledge creation; creative chaos, knowledge redundancy and requisite variety. These factors promote a more favorable organizational climate for knowledge creation. (Nonaka 1994, 27). The base for organizational knowledge creation are the individual knowledge creators to whom truly creative organization can create supportive and enabling climate by acknowledging these factors in KM strategies. Creative chaos is arising when organization reacts to changes on surrounding environment. Changes in the environment effect on individual's perceptions and commitment to knowledge. When the given contexts by environment change, organizations have to adjust existing knowledge and create new knowledge to rationalize the changes on contexts. Knowledge is needed to answer the questions and problems organization faces in the ongoing fluctuation with surrounding world. But in real life those questions are not given, instead knowledge is also needed to perceive the relevant questions and problems. (Nonaka 1994, 28).

Knowledge redundancy indicates to excessive information beyond specific information needed. This can create a vehicle for problem generation which again may lead to knowledge creation. Sharing this overlapping redundant information assists sharing tacit knowledge since everyone has own special approach on information. When individual perceptions are shared and mixed it helps especially in the phase of generating new knowledge. In the generation phase, new information is concretized with action and sharing perspectives helps to link the knowledge and action. Redundant information also enables bigger part of organization to participate in the knowledge creation process. As a result, from redundant information, the organizational hierarchies are lowered and more interaction between employees can occur. (Nonaka 1994, 28).

The third enabler defined by Nonaka for organizational knowledge creation is requisite variety. As redundancy of information increases the amount of information to be processed, there is a risk of losing valuable information in the flow all information. Requisite variety refers to the need of focusing on information storing and finding a balance between processing and creating information. This means organizations should pay attention on information process channels and take into consideration who will be responsible on what information area. Creating new knowledge requires fast and on time inquiry and reprocessing of information, hence organizational members should know to whom to turn on certain information need. (Nonaka 1994, 29).

7 THE ROLE OF INTERNAL COMMUNICATION IN KNOWLEDGE SHARING

Organization's internal communication can be defined as communication between individuals and/or groups within an organization and it can occur on several different levels, however all the time aiming on organizational development, design and redesign as well organizing every-day operations (Welch and Jackson 2007, 179). In this paper internal communication is seen as delivering information and knowledge concerning organization and its processes within the organization, including both, horizontal and vertical information flows. To be even more precise, it is seen as meaningful message exchange between employees and it can happen face-to-face or via communication technology. Although internal communication can be also informal, like chatting on coffee breaks etc., this paper acknowledges only the formal side. Organization's internal communication is seen here as the trigger that enables knowledge management and knowledge sharing.

Human-related knowledge sharing within an organization is based on organizational communication and if there are weaknesses in organizational communication, it will reflect on knowledge creation and also to the trajectory of refining knowledge from information. Whereas the previously discussed KM systems were for storing data and sharing information, communication between individuals is most likely the phase where the information is refined into knowledge. KM systems however are essential in informing and bringing explicit knowledge within reach of whole organization. Informing is one-way sending of messages and crucial part of knowledge transfer, but effective two-way communication is the key for knowledge sharing. In effective communication participants achieve shared understanding and it results in desirable action or new ways of thinking. The difference between communication and effective communication is that whereas communication is two-way exchange of messages without action, in effective communication this interaction results as knowledge sharing. Effective communication and knowledge sharing both include the aspect of understanding and internalizing the information transferred. (Kalla 2005, 304, Hudcová 2014, 51).

7.1 Individual as knowledge sharer and communicator

Knowledge sharing cannot be addressed as pure information transfer because employees are all individuals with personal perceptions. Therefore, effective communication skills are needed to support knowledge sharing. As knowledge sharing cannot be pure information transfer, it has to be comprehensive communication process which does not concentrate only on the intellectual side but acknowledges also the human side of knowledge sharing. Individuals automatically filter all information through their personal perceptions and thus the human aspect cannot be overlooked in knowledge sharing. (Kalla 2005, 308). This is one reason why face-to-face communication is often found as a best way for knowledge communication. In face-to-face communication the counter party is being seen as a whole with non-verbal signs and overall behavior, which are a significant part of communication process and has been noticed to build the feeling of trust. (Hudcová 2014, 57). If in the process of knowledge sharing there is any incorrect perceptions, those are easiest to notice and correct in face-to-face communication.

From the perspective of knowledge management, the quality of communication is perhaps more important than the volume of communication because the absorptive capacity of an individual is limited. Instead of seeing its employees as a single mass, organizations should concentrate on recognizing the internal stakeholders involved on different levels of communication and ensure those stakeholder groups recognize they are the ones who make the internal communication successful. Internal communication should not be seen as an organizational process where the organization communicates to its employees, individuals need to associate that communication is integral part of their everyday working lives and the communication cannot be effective without their participation. (Kalla 2005, 309, Welch and Jackson 2007, 183). However, including employees to internal communication is responsibility of management.

7.2 Organization as knowledge sharer and communicator

On organizational level, there are multiple factors affecting internal communication. These factors can be for example managerial philosophy and management style, organizational structure and culture, organizational objectives and the used ITC. When approaching the concept of organization as knowledge sharer, internal communication

should be the responsibility of whole organization. From the perspective of knowledge sharing it is crucial that communication is not just a top-down hierarchical information transfer, but rather it should be effective message exchanging on both ways, top-down and down to top as well as horizontally. Seeing employees as internal stakeholder groups, does not mean knowledge sharing should happen within silos of certain employee groups. The idea of stakeholders in internal communication is to clarify the flow of communication. Welch and Jackson have used the stakeholder approach on their internal communication matrix (table 2), where they have separated internal communication into four interrelated dimensions including internal line manager communication, internal team peer communication, internal project peer communication and internal corporate communication. (Welsh and Jackson 2007, 184).

Table 2. Internal communication matrix (Welsh and Jackson 2007, 185)

Dimension	Level	Direction	Participants	Content
Internal line management communication	Line managers/supervision	Predominately two-way	Line managers - employees	Employees' roles, personal impact e.g. appraisal discussions, team briefings
Internal team peer communication	Team colleagues	Two-way	Employee - employee	Team information e.g. team task discussion
Internal project peer communication	Project group colleagues	Two-way	Employee - employee	Project information e.g. project issues
Internal corporate communication	Strategic management/ Top management	Predominately one-way	Strategic management – all employees	Organizational issues e.g. goals, objectives, new developments, activities and achievements

This kind of perception of internal communication stakeholders helps also knowledge sharing and knowledge management, as organizational knowledge can also be examined through stakeholder groups. As there are different levels in internal communication so is there in organizational knowledge. The long term strategic decisions are made by senior executives who have knowledge about organization's strategic potential, but without correct information from lower level managers about operational capabilities, appropriate decisions cannot be done. To enhance internal communication and knowledge sharing, organizations must create clear picture of internal roles and areas of responsibilities. Part of this is locating functional knowledge areas and combine those with internal communication strategies so that short term operations are in line with long term decisions making. (Bailey and Clarke 2001, 61-62).

Approaching the combination of communication and knowledge areas through the different levels of internal communication requires defining those levels. There is no one correct definition but the deviation by Welsh and Jackson (2007) for example can be used to enhance knowledge sharing as there are designated areas of responsibilities when it comes to communication and knowledge sharing. Using this kind of matrix also helps to identify if there are areas where communication is not on sufficient level and there is no one focusing whether new information is applied successfully. When organization sees the effort to include its employees to the internal knowledge network and recognizes the personal relevance of its employees in internal communication, the willingness of employees to participate in knowledge sharing will probably increase.

8 THE RELATION OF KNOWLEDGE SHARING, COMMUNICATION AND KNOWLEDGE MANAGEMENT

Knowledge sharing is a complex process within an organization and it has multiple factors effecting on it. Figure 3. is a rough visualization about the process of knowledge sharing and how it could be divided into two trends of creating new knowledge or enhancing the operational availability of knowledge by effectively transferring it, and thus making operational processes more effective. The figure reflects the process of knowledge sharing and the deviation between managing tacit and explicit knowledge. In real life this process is not this hierarchical and the right column cannot be totally separated from the left one or vice versa, but this is a simplified reflection of the relation of knowledge distribution, communication and knowledge management.

Successful implementation of KM requires identifying how organizational knowledge is used to create value. If the KM practices are not in line with the perceptions employees have about knowledge, those practices will not likely manage to support the exploitation of knowledge. Nonaka and Konno have used term “Ba” which refers to a context where knowledge is created and implemented. This suggests that knowledge cannot be separated from the context and for KM practices to be successful, the context where knowledge appears, has to be understood. In other words, it has to be known who will use the knowledge and for what purpose. Every time when knowledge is created, shared or applied, there are certain factors coming from the environment affecting the values and beliefs by the people involved in the process. (Nonaka et al. 2000, 14; Marr et al. 2003, 773). In successful KM implementation it is crucial to determine what are the roles knowledge plays in the process of creating value for the organization and how it will affect to the organization trough organizational learning. (Marr et al. 2003, 773).

Figure 3. will give an idea to which directions the KM practices should be developed, depending on the wanted end-result of knowledge sharing. It suggests that knowledge can be approached as socially constructed or task related. Socially constructed knowledge means knowledge created in the interaction of individuals when again task related knowledge is seeing knowledge to be dependent of action and created for to perform certain tasks. This socially constructed knowledge is related to tacit KM approach whereas task related knowledge can be seen to be closer to explicit KM approach.

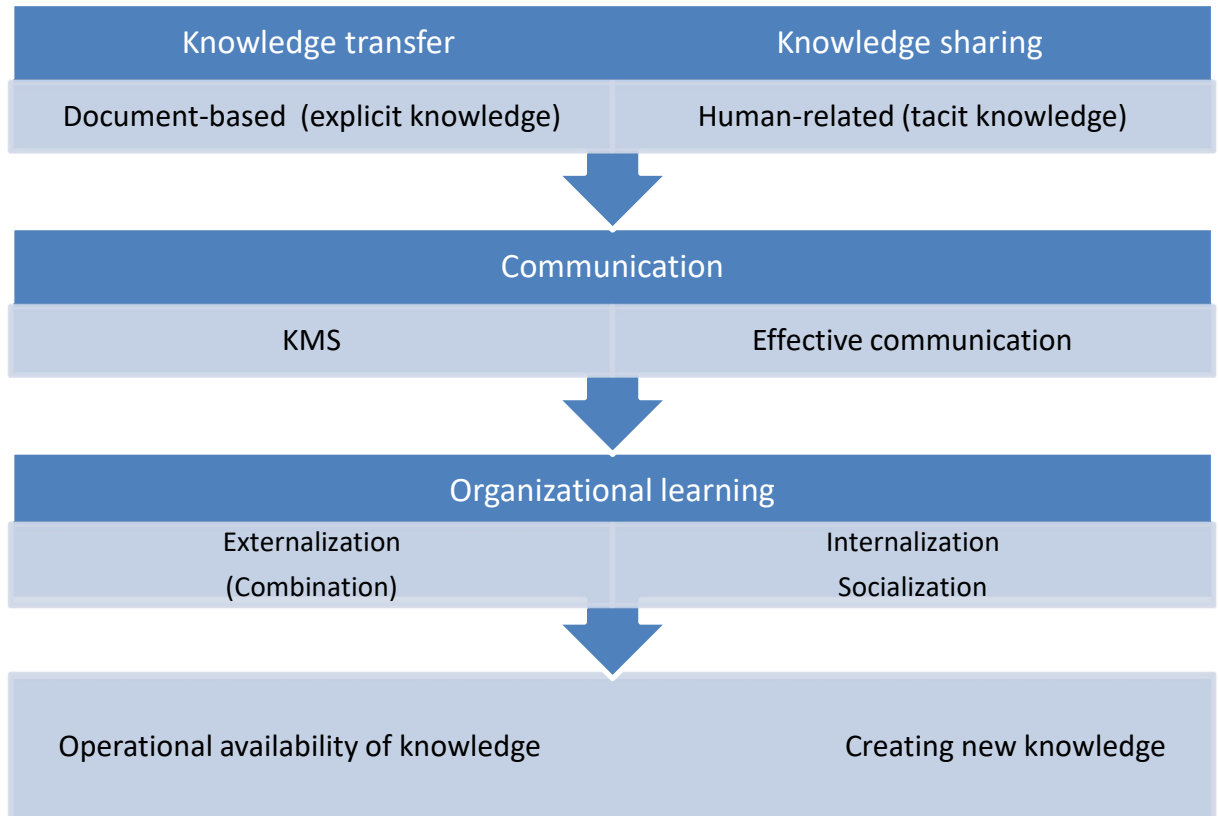


Figure 3. Process of knowledge distribution within organization (Mäkelä 2016)

8.1 Role of knowledge management and internal communication in adding operational availability of knowledge

In figure 3. the left column visualizes the process of adding operational availability of knowledge. When the wanted end-result is adding operational availability of knowledge, knowledge management practices should focus on document-based knowledge transfers. In this trend documentation plays significant role because the more codified knowledge is, the more available it is for comprehensive usage. Approaching the idea of knowledge availability from the different perspectives of knowledge presented in figure 1., the main implications of KM are building and managing knowledge stocks and exposing employees to potentially useful information. This requires managing knowledge systems and focusing on the structural side of organizational knowledge. Structural side of organizational knowledge is here understood as the structure of operational processes as well as the structure of supportive KMS. In other words, how well the organizational knowledge repositories can be integrated to the operational processes and how well the

interrelation of those processes and knowledge is understood. One major area of focusing is the organization's knowledge storing capacity. This refers to organization's routine operations and structures that support employees' quest for effective knowledge utilization. (Lee and Yang 2000, 786-787).

The biggest challenges or barriers for explicit knowledge sharing are organizational barriers and hence the focus should be on overcoming those barriers, like poor IT structure or limited communication networks (e.g. ICT infrastructure supports only information flow from top-down etc.). The previously presented communication matrix (figure 4) can be exploited in creating that organizational knowledge structure that supports knowledge distribution and documentation. When there are clear organizational communication structure and responsibilities, it clarifies the communication process and information flow. This structure should also focus on decentralized communication and establish effective communication networks throughout the organization, so that every level of organization is included in the process of information and knowledge sharing. Incorporating the communication matrix with organizational structure can enhance information transfer and knowledge documentation and after documentation follows equally important phase of data quality testing. As new knowledge is continuously added, also the quality testing should be ongoing process to prevent outdated or otherwise incorrect information.

Effective externalization of knowledge requires effective KMSs but is also requires clear processes of maintaining the KM systems. Communication has to support here the existence of KMSs and employees need to have clear picture what is desired information and who is responsible of maintaining the level of documented information. If there is no consensus over the data archiving processes, it could lead to wasted resources as the same data/information could be processed multiple times and archived in multiple places, or on the other hand, some information is not archived at all. Although in this trend KM practices rely heavily on KMSs, communication cannot totally rely on those. The process of externalization requires good communication skills, since in addition to translating own tacit knowledge, it can also extend to translating the tacit knowledge of others. For many organization KMSs are not enabling day-to-day activities, those are there just to support the activities. When KMS is not a necessity to perform every-day tasks, not everyone has access to technology based solutions whenever during a day. Because of this communication has to compensate the lack of access to KMS. When

people communicate effectively with others, operational task-related knowledge and know-how will spread and eventually will be documented.

8.2 Role of knowledge management and internal communication in creating new knowledge

For creating new knowledge, knowledge management strategies should concentrate on the soft track of knowledge management. This trend relies in the social relations of employees and their ability and willingness to share tacit knowledge. Whereas in adding the availability of knowledge, the focus of KM was in developing ITC systems, in knowledge creation, the focus is in encouraging individuals to share their tacit knowledge and forming new knowledge for example by forming expert groups. In this trend the existing knowledge is in a way challenged and thought whether there are better ways of doing things. KM practices should concentrate on HRM and tools like knowledge mapping could be implemented.

Creating new knowledge requires learning and learning primarily is individual driven, although organizational learning relies to effective knowledge documentation and sharing. Reflecting to the SECI-model, the process of internalization and socialization are the phases where new tacit knowledge is created and refined by individuals, however, from the perspective of organizational learning, this individual learning needs to be transferred into organizational through externalization and combination. Supporting this process of knowledge creation requires KM processes along with internal communication to focus on overcoming the human-related barriers in knowledge sharing. These barriers can be for example unwillingness to give up the power knowledge will create or inability to recognize effective communication. Perhaps the biggest challenge for organization in sharing tacit knowledge is to make employees see the difference between communication and effective communication.

In the creation of new knowledge, individual communication skills have a significant role. Therefore, internal communication strategies should focus on involving individuals into organizational communication. In other words, organizations should concentrate on creating free communication flow, and emphasize communication also between team members, not only between supervision and subordinates. Instead of focusing only on effective communication channels reaching the whole organization, the importance of communication on individual and team level should be acknowledged. Whereas in the

trend of increasing operational availability of knowledge the focus was more on organizational structures, in the trend of knowledge creation the focus should perhaps be more on the organizational culture.

8.3 Knowledge capabilities and knowledge sharing

In the beginning of this paper knowledge was referred as capacity-to-act and a base for organizational capabilities. More specific content of knowledge capabilities refers to the processes and infrastructure an organization uses to manage knowledge (Casselman and Samson 2007, 70). Knowledge infrastructure is partly overlapping term with knowledge enablers. According to Wang and Ahmed (2005), knowledge enablers are the required items behind organizational capacity building by knowledge. These are for example knowledge sharing itself, knowledge systems, knowledge culture and organizational memory. (Wang and Ahmed 2005, 322). These are the same items than construct the knowledge infrastructure which is the supportive base for knowledge management.

Casselman and Samson (2007) have used a deviation between process capabilities and infrastructure capabilities in their research about knowledge capabilities. These infrastructure capabilities can be seen as organizational level knowledge sharing factors (Yang and Chen 2007, 97). Knowledge process capabilities are related to the KM processes used, and knowledge sharing is one of those processes. So even though these process capabilities are not discussed here in more depth, the process of knowledge sharing is related to all discussion here. By infrastructure capabilities Casselman and Samson refer to the organizational culture, structure and used technology and almost same deviation is used by Yang and Chen (2007) in their research about knowledge sharing factors. The deviation used by Yang and Chen divides these factors into more specific categories of cultural, structural, human and technological capabilities. Human capabilities refer to the relations and networks within the organization. These social relations have a significant role in sharing tacit knowledge. Technological capabilities refer to the level of used ICT and the know-how to exploit that ICT and are important in sharing explicit knowledge. Cultural capabilities refer to the level of sharing and collaboration culture within organization and structural capabilities refers to the work design, management support and reward system of an organization. (Chen and Yang 2007, 97-99).

Organizational knowledge capabilities can be used to improve the context of knowledge sharing. Depending on organization's knowledge strategy, organizations can enhance their knowledge sharing by focusing on the critical knowledge capabilities and enablers. On human-to-human or human-related knowledge sharing the tacit KM approach is more suitable. This approach focuses on knowledge friendly culture and supports interaction among people. This requires management effort on creating suitable reward system and capturing the "Ba". (Wang and Ahmed 2005, 324). Here the human and cultural capabilities are in huge role, but structural capabilities are as important as a supportive force for the human and cultural capabilities.

In document-based knowledge sharing, explicit approach to KM should be taken. Here the focus is on contribution to organizational knowledge repositories, from where knowledge seekers can retrieve knowledge. The main knowledge capabilities here are technological capabilities, like IT structure, know-how and support, and the structural capabilities should again be used to support the flow of explicit knowledge into and out of knowledge repositories. (Wang and Ahmed 2005, 324, Chen and Yang 2007, 97).

9 ANALYSIS AND FINDINGS

Based on this paper knowledge exploitation could be said to be divided into two main streams of knowledge utilization. First one is knowledge creation based on existing knowledge and the second one is the operational availability of knowledge. If creating new knowledge is the pursued result of knowledge management, it could be said that the base for knowledge management is understanding the need for information and knowledge. In a way, knowledge creates knowledge. If organizations are not able to recognize new, emerging knowledge needs, there most likely will not be effective knowledge creation. This is because knowledge creation requires perceiving the questions to be answered, arising from the changes within an organization and in the surrounding environment.

Operational availability of knowledge requires more practical approach on knowledge, and focuses on smooth flow of processes. Task related knowledge is more linked to the structural side of organizational knowledge and requires efficient knowledge infrastructure. The role of knowledge management systems is emphasized. Whereas tacit knowledge is the key to create new knowledge and competitive advantages, operational, task related knowledge is the key to efficiency.

9.1 Hypothesis 1; Without knowledge management, effective knowledge exploitation is impossible

The first hypothesis presented in this paper was:

“Without knowledge management, effective knowledge exploitation is impossible.”

Knowledge could be said to be one of the key resources in modern business world and exploiting resources effectively requires organized approach. In this paper, it was recognized that knowledge appears in several different layers within an organization and can be exploited differently regarding of the knowledge needs. It was also noted that because of the varying instance of knowledge, knowledge management is neither straightforward concept. KM focus should be defined according the instance organization has about knowledge. Defining this instance requires knowledge need recognition and understanding the context, so called Ba, where knowledge appears. Organizations do

not have just one Ba, instead there can simultaneously several even overlapping Ba's which can be created intentionally or spontaneously. Ba's are created for example providing physical or virtual meeting spaces or even a mental space by setting common goal.

Knowledge cannot be managed in the traditional meaning of managing because it is intangible and dynamic, but knowledge management is needed to map the organizational knowledge assets and guide those assets according organizational knowledge values. This is closely related to the dichotomy between availability of operational knowledge and new knowledge creation presented in this paper.

Knowledge organizations will encounter different obstacles on effective knowledge exploitation and these obstacles vary according knowledge needs. Depending on knowledge needs, these barriers might appear on organizational culture or relate to organizational structure. Reflecting to the presented dichotomy, KM efforts should focus more on the structural barriers when enhanced operational availability of knowledge is pursued end-result. Structural barriers are here understood as inefficient IS infrastructure or unclear communication roles and channels. If organization's KMSs are not harmonized according knowledge instances, the focus of KMS administration and development might not be sufficient. For example, if the main advantage desired from KMS is to store information and keep it available, the structure of KMS should be cohesive and user-friendly. If the KMS structure is dispersed, the information is hard to keep up to date and users have to use unnecessary time for looking required information. The worst-case scenario is that willingness to search information drops and same mistakes or problems are faced repeatedly. When new information is gained, not knowing how to store it might lead to losing that information.

To ensure information is stored and available for transferring it to knowledge when needed, there should be clear communication roles within organization. Naming an owner for specific areas of information, clarifies the responsibilities in organizational knowledge exploitation. Reflecting to the idea of internal communication stakeholders presented in this paper, when there are certain persons named for knowledge management, they can survey the stakeholders involved in different information areas. When the stakeholders are known, knowledge managers can make sure up to date information is available at the right time for the correct persons, instead of overwhelming data flows throughout the organization. Excessive information can be beneficial up to some point, but it should not displace the real information needed.

Deriving from above, the hypothesis presented can be said to be true from the perspective of operational knowledge and its availability. Knowledge management is needed in a manner of surveying organizational barriers and making strategies to overcome those. Otherwise important information can disperse to the ongoing information flow within organizations and never meet the correct stakeholders.

Above statement is made from the perspective of explicit knowledge, but as noted before, also tacit information has its barriers. Tacit knowledge related barriers are more often found in organizational structure and culture, rather than in KM systems. When it comes to tacit knowledge, the main knowledge enablers could be said to be the earlier discussed human and cultural capabilities. Organizational cultural capabilities refer to the organizational culture of knowledge sharing and collaboration. Challenges on sharing tacit knowledge are often human related hence tacit knowledge often occurs on individual level and is not necessarily even recognized by the knowledge holder. Collaboration between team members and sharing even knowledge which might not appear as relevant might trigger a chain of thoughts which allows individual to recognize the knowledge already possessed. Individuals might cling to the knowledge they have and not share it because it is thought that knowledge gives an advantage over the organization and makes one irreplaceable. Organizations should try to empower a culture where knowledge sharing is perceived as two-way information sharing which creates two-way understanding and hence is beneficial for every participant.

Knowledge management efforts should concentrate on embracing the creative chaos derived from the changes on outside and within the organization. Organization should be able to support individuals on rationalizing the changes coming from surrounding environment and focus on perceiving the relevant knowledge needs. Tacit knowledge might be distinctive, but knowledge management is needed to guide individuals to exploit and recognize the knowledge they have. Organization has a huge role in creating the Ba, context where all knowledge is created, shared and applied. Recognizing the key knowledge assets and creating the Ba cannot be done without knowledge management, hence, when it comes to tacit knowledge, the hypothesis one could be said to be true.

9.2 Hypothesis 2; Effective knowledge sharing enhances knowledge exploitation and knowledge creation

The second hypothesis presented in this paper was;

“Effective knowledge sharing enhances knowledge exploitation and knowledge creation.”

Based on previous researches a knowledge-based view has been presented which states that information itself is not so valuable, but instead the value is created when information has been refined into knowledge. Every organization has information and knowledge and the level of knowledge exploitation defines the value of that knowledge. As the environment where organizations operate advances all the time, so should the organizations. Instead of gathering and storing knowledge, organizations should also focus on refining that existing knowledge to meet the changing requirements coming from the markets. As organizational knowledge management efforts aim to map the key knowledge assets, successful experiences should not lead astray and become a hinder for knowledge creation. As organization has identified its core competencies, it should not blindly focus on those, but also perceive the surrounding markets. The primary source for new knowledge is existing knowledge which needs to be shared to be effectively utilized. Effective knowledge exploitation requires recognizing the organizational knowledge needs and the relevant organizational knowledge sources.

In this paper it was also noticed that knowledge exploitation can have different instances and it is dependent on the differences between those instances, what approach organization should have towards knowledge sharing. Following the dichotomy between tacit and explicit knowledge sharing, differences between human-related and document-based knowledge sharing were compared. It was noticed that when it comes to document-based knowledge sharing, it actually is more of knowledge transfer instead of sharing where mutual understanding would be created. If organizational knowledge repositories are not aligned with the whole knowledge infrastructure and the knowledge seekers are not familiar with those repositories, the masses of documented information could overwhelm the needed information. The role of effective knowledge sharing highlights here as a way to coherent knowledge infrastructure and ensuring that relevant knowledge stakeholders are associated with relevant knowledge and information sources.

When it comes to human-related knowledge sharing, the role of knowledge sharing is more a mechanism to create interpersonal relations and share experiences. It is not so straight-lined distribution of knowledge, it is much more complex process of creating meanings and perceptions. To exploit all the knowledge organizations has, it should be able to combine the mechanisms of document-based and human-related knowledge

sharing as these two are often closely linked together. Knowledge creates knowledge, but it requires combining different organizational information and knowledge bases and conducting knowledge to where it is needed. SECI model presented by Nonaka was based on idea of knowledge refinement through social processes and knowledge sharing. It highlights the meaning of collaboration and knowledge sharing in the process of knowledge creation. Different instances of knowledge and information can be brought together mainly through different communication mechanisms and the spiral of knowledge creation presented in the SECI model is fuelled by these communication mechanisms. When knowledge is shared, it is continuously shaped, re-evaluated and refined through different point-of-views, values and perceptions. It does not matter whether the focus is on document-based or human related sharing, one of the most important knowledge exploitation mechanisms is finding the balance between processing and creating knowledge and the foundation for this is in effective communication and knowledge sharing models. As noted, knowledge created knowledge when it is shared, hence the hypothesis presented is true. Knowledge is also exploited more effectively when it is easily available and when organizations are aware of the knowledge they have.

9.3 Hypothesis 3; Knowledge creation is dependent on knowledge management and internal communication

Final hypothesis presented in this paper was;

“Knowledge creation is dependent on knowledge management and internal communication”.

It was already stated that knowledge sharing is essential when it comes to knowledge creation, but what is the role of internal communication in that sharing process and how dependent is knowledge creation on well managed internal communication? In this paper, it was noticed that from the perspective of knowledge creation, the role of knowledge sharing is more significant than knowledge transfer, although knowledge transfer is not totally meaningless either. The process of knowledge sharing is a comprehensive process of creating meaning. When meaning is being created, also knowledge is created. An important role for internal communication arises from this difference between knowledge transfer and sharing. When organizations plan their internal communication models, the fact that explicit and tacit knowledge are

communicated differently should be noticed. Knowledge creation cannot happen if organization focus only on transferring explicit knowledge, instead knowledge management and internal communication should also acknowledge the social aspect of human-related communication.

Above it was noted that knowledge creation is fueled with knowledge sharing. The tools for effective knowledge sharing lie in knowledge management and internal communication. In this paper a communication matrix by Welsh and Jackson was presented and the term of knowledge stakeholders has been mentioned repeatedly. Knowledge appears on several different layers within organizations and as the layers change, so does the instance of knowledge, for example organizational visions versus operational know-how. If knowledge sharing within an organization is restricted to information flow from top down, the process of creating new knowledge will be extremely unlikely. As already mentioned before, knowledge sharing is a two-way interaction where mutual understanding is created. The different layers of knowledge need to be brought together and this requires effective internal communication, both horizontally and vertically. This brings us back to the communication matrix and the importance of internal communication channels and culture. The process of knowledge creation is not just a team of experts throwing ideas and changing opinions, it is much more complex process starting from basic organizational communication and social interaction guided by internal communication models. It was already noted that when it comes to human-related knowledge sharing, the organizational culture is a notable factor. Knowledge management efforts should together with internal communication efforts aim towards knowledge sharing culture, where employees feel they are part of organizational knowledge network.

As knowledge creation is heavily dependent on human-related knowledge sharing, the third hypothesis presented could be said to be true. However, knowledge creation can happen also without planned internal communication and knowledge management as knowledge is also shared unintentionally through everyday social interactions within organization. With these two factors, knowledge creation though can be boosted, and new successes do not have to be lucky coincidences. When knowledge management efforts focus also on the side of internal communication and sees employees as individuals, truly knowledge sharing organizational culture can be emphasized. Individuals all perceive the information they receive through their own experiences and

values, and the receiving capacity of individual is limited and therefore the quality of internal communication is crucial.

10 CONCLUSIONS

Theory part of this thesis explained the nature of information and knowledge based on earlier researched made from these topics. Knowledge has its origins on data and information and the organizational ability to refine information and knowledge is the base for creating new knowledge. Also the differences of tacit and explicit knowledge were compared and based on those, different angles for knowledge management and knowledge sharing were discussed. The idea was processed further and the relation of knowledge sharing and knowledge creation was examined. It was noticed that different instances of knowledge require different approaches on knowledge management efforts. Two approaches for knowledge management practices were presented, one for knowledge sharing and the other for knowledge transfer.

It was noticed that when it comes to the availability of operational knowledge, effective knowledge transfer is crucial. When thinking purely knowledge transfer, the focus of knowledge management efforts should be more on the knowledge management systems created for knowledge storing and mass transferring. Implementing a knowledge management system should begin from a user perspective. Today's technologies ensure that organizations can easily store masses and masses of information, but to be able to exploit that stored information, it needs to be available for the users. Knowledge management is needed to lead all that information within organization and to ensure the knowledge infrastructure supports knowledge exploitation.

The other side of knowledge sharing was the human-related sharing, where the focus is in the social interaction. Knowledge management efforts should focus on supporting individuals to share their perceptions and ensure knowledge is not loosed over a poor organizational communication. However, knowledge management cannot be limited to be responsibility of one or few members of organization, but it should be a joint effort. The strategical guidelines are set by management but implementing those knowledge management strategies is dependent on all members of organization. The spiral of knowledge creation requires interaction within the organization and effective knowledge transfer, where understanding is created and information gains meanings.

As a conclusion it could be suggested to examine knowledge processing activities and knowledge creation activities separately but also finding the balance and similarities between these two. In the end, these processes are closely linked together, but finding

best practices requires seeing the differences also. These two approaches on knowledge both rely on the organizational knowledge enablers like the information systems used and organizational culture. The importance of different enablers changes as the instance of knowledge and the requirements for it changes. Thus, one of the key functions of knowledge management is to map those crucial enablers. In addition to recognizing the key enablers, also the key knowledge stakeholders need to be recognized and even furthermore, create a harmonization between knowledge enablers and stakeholders.

11 FUTURE STUDY

The main limitation of this research is its theoretical nature. There is no empirical evidence gathered to back-up the findings in this research and thus more empirical research is needed. The appearance of knowledge and knowledge management should be examined in real-life situations. When companies with different knowledge needs and desired knowledge management needs would be examined, maybe differences or similarities in chosen knowledge management and internal communication strategies could be recognized to back-up the findings in this research.

It was suggested in this paper to examine knowledge from different perspectives regarding what are the organizational knowledge needs. This should be examined in real-life, could knowledge be approached from purely operational processing perspective where knowledge is seen as organizational resource which could be made available for every member within the organization. As well it is needed to examine could knowledge be approached as a resource which lies in individuals and needs to be communicated to trigger an organizational learning process where new knowledge can be created as well. If these two approaches can be separated in real-life organizational operations, the differences and similarities in knowledge management and communication behaviors and processes between these two can be compared to test whether the hypothesis still are valid in real life.

REFERENCES

- Bailey C., Clarke M. 2001. Managing knowledge for personal and organizational benefit. *Journal of Knowledge Management*, Vol. 5 Iss. 1 pp. 58-68.
- Barachini F. 2009. Cultural and social issues for knowledge sharing. *Journal of Knowledge Management*, Vol. 13 Iss. 1 pp. 98-110.
- Cao Q., Thompson M. A. & Triche J. 2013. Investigating the role of business processes and knowledge management systems on performance: A multi case-study approach. *International Journal of Production Research*, Vol. 51 Iss. 18 pp. 5565-5575.
- Casselman R. M. & Samson D. 2007. Aligning knowledge strategy and knowledge capabilities. *Technology Analysis & Strategic Management*, Vol. 19 Iss. 1 pp 69-81.
- Choi S. Y., Kang Y. S. & Lee H. 2008. The effects of socio-technical enabler on knowledge sharing: an exploratory examination. *Journal of Information Science*, Vol 34 Iss. 5 pp. 742-754.
- Gao F., Li M. & Clarke S. 2008. Knowledge, management, and knowledge management in business operations. *Journal of Knowledge Management*, Vol. 12 Iss 2 pp. 3 – 17.
- Hong J., Lehtonen M. & Stähle P. 2011. Co-evolution of knowledge and competence management and its strategic implications. Lappeenranta: Lappeenranta University of Technology.
- Hudcovà S. 2014. Tools of internal communication from knowledge transfer perspective. *Journal of Competitiveness*, Vol. 6 Iss. 4 pp. 50-62.
- Kalla H. 2005. Integrated internal communications: a multidisciplinary perspective. *Corporate Communications: An Internal Journal*, Vol. 10 Iss. 4 pp. 302-314.
- Lahtinen J. 2013. Local social knowledge management: A case study of social learning and knowledge sharing across organizational boundaries. *Journal of Information Science*, Vol. 39 Iss. 5 pp. 661-675.
- Laihonen H., Hannula M., Helander N., Ilvonen I., Jussila J., Kukko M., Kärkkäinen H., Lönnqvist A., Myllärniemi J., Pekkola S., Virtanen P., Vuori V. & Yliniemi T. 2013. *Tietojohtaminen*. Tampere University of Technology. Tampereen yliopistopaino Oy Juvenes Print, Tampere.
- Lee C. C., Yang J. 2000. Knowledge value chain. *Journal of Management Development*, Vol. 19 Iss 9 pp. 783 – 794.
- Lintilä L. 2002. Organisaation sisäisen tietoverkon hyödyntäminen tiedonhankintaan ja viestintään. Academic dissertation, University of Tampere. Tampereen yliopistopaino Oy Juvenes Print, Tampere.
- Marr B., Gupta O., Pike S. & Roos G. 2003. Intellectual capital and knowledge management effectiveness. *Management Decision*, Vol. 41 Iss. 8 pp. 771-781.
- Nonaka I. 1994. A dynamic theory of organizational knowledge creation. *Organization Science*, Vol. 5 Iss. 1 pp. 14-37.
- Nonaka I., Toyama R. & Konno N. 2000. SECI, Ba and Leadership; a unified model of dynamic knowledge creation. *Long Range Planning* 33, pp. 5-34.
- Nuopponen A. 2009. Käsitemanalyysejä käsitemanalyyseistä – kohti systemaattista käsitemanalyysejä. Publications of the Research Group for the Theory of Translation, LSP and Multilingualism at the University of Vaasa, No. 36, pp. 308-319.

Offsey S. 1997. Knowledge Management: Linking people to knowledge for bottom line results. *Journal of Knowledge Management*, Vol. 1 Iss. 2 pp. 113-122.

Pankaj S., Pankaj P. C. 2013. How information systems help create OM capabilities: Consequents and antecedents of operational absorptive capacity. *Journal of Operations Management*, Vol. 31 (2013) pp. 409-431.

Sveiby K. E. 2001. A knowledge-based theory of the firm to guide in strategy formulation. *Journal of Intellectual Capital*, Vol. 2 Iss 4 pp. 344-358.

Yang C. & Chen L-C. 2007. Can organizational knowledge capabilities affect knowledge sharing behavior? *Journal of Information Science*, Vol. 33 Iss. 1 pp. 95-109.

Wang C. L., Ahmed P. K. 2005. The knowledge value chain: a pragmatic knowledge implementation network. *Handbook of Business Strategy*, Vol. 6 Iss. 1 pp. 321-326.

Welch M., Jackson P. R. 2007. Rethinking internal communication: a stakeholder approach. *Corporate Communications: An International Journal*, Vol. 12 Iss. 2 pp. 177-198.

Wijnhoven F. 2003. Operational knowledge management: identification of knowledge objects, operation methods, and goals and means for the support function. *Journal of the Operational Research Society*, Vol 54 Iss. 2 pp. 194-203.

Electronic sources

Alavi & Leidner 2001. Knowledge perspectives and their implications, referred to 1.8.2016. Available on the web at <https://www.semanticscholar.org/paper/Review-%3A-Knowledge-ManagementandKnowledgeSystemsAlaviLeidner/26eed93a6aadfda0e1f43ff7e30c6fd2d308151b>

Xu K. 2007. Integrating knowledge management into corporate internal communication. IEEE International Professional Communication Conference, 1.-3.10.2007 Seattle WA, USA, referred to 16.8.2016. Available on the web at <http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=4459056>.

Wikipedia.org, picture of SECI model, referred to 18.3.2017. Available on the web at http://en.wikipedia.org/wiki/Knowledge_management#/media/File:Knowledge_spiral.svg.

